

Claims

1. Device for slowing down and disintegrating a plug of liquid plunging forward in a duct, characterized in that the same comprises a container (1) having a bottom (5) and an opposite inlet (2), which is connectable to the duct and through which the plug of liquid can be directed into a central, axial trajectory in the container, that inside the container an inner tube (7) being open towards the bottom (5) is arranged, which tube separates an inner hollow space (8) from an outer, cross-section-wise ring-shaped hollow space (9), that in the trajectory of the entering plug of liquid a distributor body (13, 13a) is arranged with the purpose of splitting and disintegrating the plug of liquid as well as throwing out the disintegrated constituent parts of liquid in the direction outwards from the centre, and that the bottom (5) comprises a concavely curved guide surface (16) with the purpose of diverting the liquid from one of the hollow spaces to the other one in order to, in this way, reverse the direction of motion of the liquid.

2. Device according to claim 1, characterized in that the distributor body (13) is arranged adjacent to the bottom (5) of the container and that the inner tube (7) and the inlet (2) are arranged in alignment, one after the other, the inner tube (7) being arranged to direct the entering plug of liquid through the inner hollow space (8) up to the distributor body (13), and the curved guide surface (16) being arranged to deflect the disintegrated liquid out in the outer hollow space (9) in order to, in the same, compel the liquid to move in the opposite direction against the direction of motion of the entering plug of liquid.

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3. Device according to claim 2, characterized in that the outer hollow space (9), at the end thereof distanced from the bottom (5), is closed by means of an end

wall (6) extending between the container and the inner tube.

4. Device according to claim 1, characterized in that the distributor body (13a) is arranged at an end of the inner tube (7) located up-stream for splitting and disintegrating the arriving plug of liquid immediately after the passage thereof through the inlet (2) and directing the disintegrated liquid through the outer hollow space (9) up to the bottom (5), where the curved guide surface (16) thereof redirects the liquid into a reversed flow inside the inner tube.

5. Device according to claim 4, characterized in that the inner tube (7) includes at least one guiding flange (27) with the purpose of directing the liquid passing through the outer hollow space (9) radially outwards to the inside of the container.

10 20 6. Device according to any one of the preceding claims, characterized in that the container (1) comprises a rotationally symmetrical outer tube (4) that is concentric with a likewise rotationally symmetrical inner tube (7).

25 30 7. Device according to any one of the preceding claims, characterized in that the distributor body (13, 13a) has a shape that tapers in the direction against the flow of the entering plug of liquid.

35 8. Device according to claim 7, characterized in that the distributor body (13, 13a) has a conical envelope surface (14) extending from a tip.

9. Device according to any one of the preceding claims, characterized in that the inner tube includes a set of holes (22, 22a) through which fluid can be directed back from one of the hollow spaces to the other.

10. Device according to claim 3 and 9, characterized in that the inner tube (7), in addition to a first set of holes (22) located in the vicinity of the closing end wall (6) between the container and the inner tube, comprises at least one second set of holes (22a) located closer to the open end (10) of the inner tube, which set of holes co-operates with a collar (25) that aims at directing axially flowing air and/or liquid inwards towards the holes (22a).

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11. Method of slowing down and disintegrating a plug of liquid plunging forward in a duct, characterized in that the plug of liquid, via an inlet (2), is directed into a central, axial trajectory in a container (1) that is closed by means of a bottom (5), inside which container an inner tube (7) is arranged that opens towards the bottom, which tube delimits an inner hollow space (8) from an outer, cross-section-wise ring-shaped hollow space (9), and is brought to hit a distributor body (13, 13a) that tapers in the counterflow direction with the purpose of becoming split and disintegrated by the same, and the disintegrated liquid being brought to pass along a concavely curved guide surface (16) in order to redirect the liquid from one of the hollow spaces to the other and thereby reverse the direction of motion of the liquid.

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